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(54)SIGNAL LIGHT MONITOR AND OPTICAL
AMPLIFIER USING THE SAME

(57)Abstract

PROBLEM TO BE SOLVED: To monitor the power of each signal light for every signal light wavelength of wavelength multiplex signal light, and to monitor the wavelength of signal light of wavelength multiplex signal light.

SOLUTION: This optical amplifier comprises an optical branching filter 20 inserted into an optical fiber transmission line 10, a wavelength-variable filter 30 which transmits a light component of specific wavelength comprised in light branched off by the optical branching filter 20, a sweeper 40 which sweeps the wavelengths of the transmitted light of the wavelength-variable filter 30 in a specific range of wavelength, a photodetector 50 which detects the transmitted light of the wavelength-variable filter 30, a sampling device 6, which samples to output of the photodetector 50, a memory device 70 which stores the change over time of the sampling device 60, and a processing device 80 which processes the waveform of the output of the photodetector 50 basing on data stored in the memory device 70. The optical amplifier is equipped with a signal light monitor at its input or output side, and

capable of monitoring physical quantities, such as the number of signal light, the level of each signal light, and an S/N ratio.

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